

Complete Listing of the Claims:

1. -25. (Cancelled)

26. (Previously presented) A method of analyzing a target polynucleotide comprising:
- (a) pretreating the surface of a substrate with a polyelectrolyte ~~multiplayer~~ *multilayer* (PEM) to create surface chemistry that facilitates polynucleotide attachment and sequence analysis;
 - (b) providing a primed target polynucleotide attached to a surface of a substrate;
 - (c) providing a labeled first nucleotides to the attached target polynucleotide under conditions whereby the labeled first nucleotide attaches to the primer, if a complementary nucleotide is present to serve as template in the target polynucleotide;
 - (d) determining presence or absence of a signal, the presence of a signal indicating that the labeled first nucleotide was incorporated into the primer, and hence the identity of the complementary base that served as a template in the target polynucleotide;
 - (e) repeating steps (c)-(d) with a labeled further nucleotide, the same or different from the first labeled nucleotide, whereby the labeled further nucleotide attaches to the primer or a nucleotide previously incorporated into the primer; and
 - (f) repeating step (e) until identities of the bases in a portion or all of the target polynucleotide are determined.

27. - 40. (Cancelled)

41. (Withdrawn) An apparatus for analyzing the sequence of a polynucleotide, comprising:
- (a) a flow cell comprising at least one microfabricated synthesis channel; and
 - (b) an inlet port and an outlet port, said inlet port and outlet port being in fluid communication with said flow cell for flowing fluids into and through said flow cell.
42. (Withdrawn) The apparatus of claim 41, furthering comprising a detector to detect a signal from said surface.